We claim:

1. A method for testing the quality of reclaimable waste paper matter containing contaminants, said method comprising the steps of:

i) directing polychromatic light onto an inspected area of said matter;

ii) sensing light reflected on the inspected matter to generate color image pixel data representing values of color components within a color space for pixels forming an image of said inspected area;

iii) comparing said image pixel data with color classification data related to at least one said contaminant to identify the pixels likely to be associated with the presence of said contaminant in said inspected area;

iv) selecting the remaining image pixel data likely to be not associated with said contaminant; and

v) generating luminance-related data from said remaining image pixel data to provide an indication of the quality of said reclaimable waste paper matter.

2. The method according to claim 1, further comprising between said steps iii) and iv), the step of:

a) analyzing the image pixel data by verifying if said identified pixels form one or more groups including a sufficient number of pixels to validate said pixels identification.

3. The method according to claim 1, further comprising the step of generating a histogram of identified pixel occurrences for said contaminant to provide an indication of the presence thereof in said inspected area.

4. The method according to claim 1, wherein said classification color data are derived from statistical distribution data representing values of color components within said color space that characterize said contaminant.

5. The method according to claim 4, wherein said classification color data is derived from said statistical distribution through Bayesian estimation of a probability that each said pixel be associated with the presence of said contaminant.

6. The method according to claim 5, wherein said estimated probability is greater than a predetermined probability threshold to be used to derive said classification color data.

7. The method according to claim 1, wherein said comparing step iii) included comparing said image pixel data with color classification data related to a plurality of said contaminants to identify the pixels likely to be associated with the presence of each said contaminant in said inspected area.

8. The method according to claim 7, further comprising the step of generating a histogram of identified pixel occurrences for each said contaminant to provide an indication of the presence thereof in said inspected area.

9. The method according to claim 7, wherein said classification color data are derived from a plurality of statistical distributions representing values of color components within said color space that characterize said plurality of contaminants

10. The method according to claim 9, wherein said classification color data is derived from said statistical distribution data through Bayesian estimation of a plurality of probability values that each said pixel be associated with the presence of said plurality of contaminants for selecting the statistical distribution having the highest probably value, to identify said pixel as to be likely associated with the presence of the contaminant characterized by said selected statistical distribution.

11. The method according to claim 10, wherein each said estimated probability value is greater than a predetermined probability threshold to be used to derive said classification color data.

12. An apparatus for testing the quality of reclaimable waste paper matter containing contaminants, said apparatus comprising:

a polychromatic light source for illuminating an inspected area of said matter;

an image sensor receiving light reflected on the inspected matter to generate color image pixel data representing values of color components within a color space for pixels forming an image of said inspected area;

data processor means for comparing said image pixel data with color classification data related to at least one said contaminant to identify the pixels likely to be associated with the presence of said contaminant in said inspected area, for selecting the remaining image pixel data likely to be not associated with said contaminant and for generating luminance-related data from said remaining image pixel data to provide an indication of the quality of said reclaimable waste paper matter.

13. The apparatus according to claim 12, wherein said data processor further analyzes the image pixel data by verifying if said identified pixels form one or more groups of pixels including a sufficient number of pixels to validate said pixels identification.

14. The apparatus according to claim 12, wherein said data processor further generates a histogram of identified pixel occurrences for said contaminant to provide an indication of the presence thereof in said inspected area.